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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/798,143	03/11/2004	Marco Olper	163-539	5567
47888	7590	03/03/2006	EXAMINER	
HEDMAN & COSTIGAN P.C. 1185 AVENUE OF THE AMERICAS NEW YORK, NY 10036			MCNELIS, KATHLEEN A	
			ART UNIT	PAPER NUMBER
			1742	
DATE MAILED: 03/03/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/798,143	<b>Applicant(s)</b> OLPER ET AL.	
	<b>Examiner</b> Kathleen A. McNelis	<b>Art Unit</b> 1742	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 March 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11 March 2004</u> . | 6) <input type="checkbox"/> Other: _____  |

### **Claims Status**

Claims 1-14 are presented for examination.

### **DETAILED ACTION**

#### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “leaching solution, by air bubbling” from claim 11 and the “solution is re-circulated to the leaching phase after recovering said precipitate” in claim 12 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. With respect to claim 12, Figure 1 does not show that solution from copper recovery passes to the regeneration unit of the leaching solution 11, therefore the stream of leachate from (11) to (10) does not appear to be “re-circulated” but rather a fresh source of solution as it is shown on Figure 1.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an

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application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### **Claim Rejections - 35 USC § 112**

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 13-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "parasite currents" in claim 13 is not disclosed or defined in the specification. Examiner has assumed that this refers to eddy currents as described page 11 of the specification for purposes of examination.

### **Claim Rejections - 35 USC § 102**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 and 5-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Langer et al. (U.S. Pat. No. 4,668,289).

With respect to claims 1, 2, 7 and 8, Langer et al. discloses a method for reclaiming gold from gold containing electronic scrap (col. 3 lines 20-23) wherein electronic scrap is contacted with an aqueous solution of cupric chloride with complexing agent sodium chloride (col. 4 lines 20-68). An example is provided wherein a solution of cupric chloride, and sodium chloride (example 1, col. 8 lines 1-69) is used to leach the base metal from an electrical circuit board as gold-containing scrap (example 3, col. 9 lines 32-55). The base metals were solubilized by the leach solution while the gold remained solid as "very thin gold shavings". A residue containing 92% gold was subsequently recovered by filtration (col. 9 lines 32-55).

With respect to claim 3, Langer et al. discloses that the leaching is conducted at elevated temperatures to speed the dissolution of the base metal, the temperature being between ambient (15 to 45 °C) and less than the boiling temperature of the liquid, typically 110 °C (col. 5 line 64- col. 6 line 10). This can be stated as a range between about 45 °C and 110 °C, which anticipates the claimed range of between 50 to 105 °C (claim 3).

With respect to claim 5, Langer et al. discloses that the preferred pH is below approximately 3.0 (col. 4 line 65 to col. 5 line 1) which is the same as the claimed range of 0 to 3. With respect to claim 6, Langer et al. discloses in Examples 1-5 a copper solution of 0.6 M  $\text{CuCl}_2$  (col. 8 lines 1-20), which represents a copper content of approximately 38 g/l which is within the claimed range of between 20 to 50 g/L.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Langer et al. (U.S. Pat. No. 4,668,289).

Langer et al. discloses a method for reclaiming gold from electronic scrap by leaching in a solution of cupric chloride and sodium chloride to solubilize the base metal, recovering the gold as a solid as described above regarding claim 1. Langer et al. discloses elevating the temperature of the solution to between 45 °C and 110 °C to speed the dissolution of the base metal as discussed above regarding claim 3. The range of between 45 °C and 110 °C overlaps with the claimed range of between 70 °C and 90 °C. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a temperature of between 70 °C and 90 °C in the leaching step of Langer et al. since Langer et al. teaches that leaching is equally effective at all temperature between 45 °C and 110 °C. In example 3, Langer et al. discloses that the base metal was fully dissolved in under one hour when leaching at a temperature of 103 °C. The time of less than one hour is close to the claimed range of 1 to 3 hours. It has been well settled that where claimed ranges and prior art ranges do not overlap but lie close enough that one of ordinary skill in the art would expect the same properties to result, a prima facie case of obviousness exists (M.P.E.P. § 2144.05).

Further, Langer recognizes leaching temperature as a result effective variable which is increased to speed the leaching time of the base metal as discussed above regarding claim 3. It would have been obvious to one of ordinary skill in the art at the time the invention was made to adjust the temperature of the leaching step as a result-effective variable to affect the leaching time (see M.P.E.P 2144.05, II, B).

Claims 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Langer et al. (U.S. Pat. No. 4,668,289) in view of Valentine et al. (U.S. Pat. No. 4,261,738).

Langer et al. discloses a method for reclaiming gold from electronic scrap by leaching in a solution of cupric chloride and sodium chloride to solubilize the base metal, recovering the gold as a solid as described above regarding claim 1.

With respect to claims 9 and 10, Langer et al. does not disclose that silver or copper is recovered.

Valentine et al. discloses a process for recovering precious metals, especially gold from scrap of a bimetallic material where a precious metal is mechanically bonded to a base metal by dissolving the base metal (abstract). Valentine discloses that silver may be used as an interliner and adhere to the gold rather than dissolve with the base metal. The silver is removed from the gold by leaching in nitric acid followed by silver recovery by cementation (col. 10 line 56 – col. 11 line 30 and figures 4 and 5). Copper is recovered as a valuable by product and the reactants are recycled within a closed loop (col. 2 lines 65-68). It would have been obvious to one of ordinary skill in the art at the time the invention was made to leach and recovery silver and copper as taught by Valentine et al. from the gold reclaiming process of Langer et al. to separate the silver and copper from the gold as taught by Valentine et al. and further to recover silver and copper as valuable by-products.

With respect to claims 11-12, Langer et al. teaches that after removing the gold residue from the leaching solution, the base metal ions can be oxidized and removed to



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regenerate and reuse the leach solution, and that this may be accomplished by air oxidation (col. 7 lines 15-33).

Langer et al. does not teach that this produces a precipitate of iron and tin while oxidizing copper from cuprous to cupric chloride.

Valentine et al. discloses a process for recovering precious metals, especially gold from scrap of a bimetallic material where a precious metal is mechanically bonded to a copper base metal by dissolving the base metal (abstract). During the leaching step, reactive oxygen is provided by sparging air into the leaching liquid. This oxidizes the cuprous ions to cupric and any unreacted base metals form an insoluble slime. Valentine et al. lists tin as an example of one of the precipitated base metals but does not list iron (col. 5 lines 15-50). However, one of ordinary skill in the art at the time the invention was made would expect dissolved iron to oxidize in the presence of sparge air and to precipitate with the tin. Further, since the process of bubbling air into the solution to precipitate base metals disclosed by Langer et al. in view of Valentine et al. is substantially the instant claimed process, the same results (i.e. iron precipitation with the tin) would be expected.

Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Langer et al. (U.S. Pat. No. 4,668,289) in view of Olivier (U.S. Pat. No. 6,024,226)

Langer et al. discloses a method for reclaiming gold from electronic scrap by leaching in a solution of cupric chloride and sodium chloride to solubilize the base metal, recovering the gold as a solid as described above regarding claim 1.

Langer et al. does not disclose that the solids fraction is subjected to flotation to separate the cards and plastic, magnetic separation to recover iron and aluminum separation with eddy currents.

Olivier discloses a process for separating recovering materials from a heterogeneous mixture of particulate solids using liquid media of different specific gravities to separate the solid materials by flotation (abstract). Oliver lists grinding (instant claim 14), magnetic separation and eddy current concentration as known means of waste recovery and recycling (col. 2 lines 6-30) and teaches that used singly, these known devices have limited ability to cost effectively separate components from wastes of varying components (col. 3 lines 30-47). Olivier teaches that by using a floatation separation process, a low cost waste treatment operation may be achieved (col. 20 lines 4-51). Once segregated into different density fractions, Olivier teaches the use of an eddy current separator to separate aluminum from other nonferrous material and a magnetic separator to remove ferrous particles leaving aluminum product (col. 34 lines 38-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the gravity flotation/eddy current/magnetic separation process taught by Olivier to separate plastic, iron rich and aluminum rich fractions in the gold reclaiming process of Langer et al. to provide a low cost waste treatment operation as taught by Olivier.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kathleen A. McNelis whose telephone number is 571 272 3554. The examiner can normally be reached on M-F 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
ROY KING  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700